ಅಲ್ಪ ಸಂಖ್ಯಾತರ ಕಲ್ಯಾಣ ಇಲಾಖೆ
ಅಲ್ಪ ಸಂಖ್ಯಾತರ ನಿರ್ದೇಶನಾಲಯ

PRASANTH KUMAR ROYAL'S, M.A, B.Ed, D.Ed

SSLC MATHEMATICS
Practice papers

Presented by:
Directorate of Minorities
Minority welfare department

Minority Welfare Department

Directorate of minorities

Mr.MAHIBOOB SAB KARATAGI
HONORABLE DIRECTOR
DIRECTORATE OF MINORITIES

SSLC MATHEMATICS

PRACTICE PAPERS-MCQ

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Minority welfare department
Directorate of minorities
Practice paper-01

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. The solution of the equations x – y =36 and x + y = 50 is:
(A) 43 and 5 (B) 45 and 3 (C) 43 and 7 (D) 41 and 9.

2. The pair of equations 7x + 3y – 5 = 0 and −21x – 9y + 15 = 0 have:
(A) A unique solution (B) Exactly two solutions
(C) Infinitely many solutions (D) No solution

3. If the lines given by 2x + 5ky = 2 and 2x + 15y + 1 = 0are parallel, then the value of k is
(A) 5/4 (B) 2/5 (C)15/4 (D) 3/1

4. Graphically, the pair of equations
8x – 16y + 28 = 0
2x – 4y + 7 = 0
Represents two lines which are:
(A) Intersecting at exactly one point.
(B) Intersecting at exactly two points.
(C) Coincident.
(D) Parallel

5. The first four terms of an AP, whose first term is 2 and the common difference is 4, are
(A) – 2, 0, 2, 4 (B) 2, 6, 10, 14
(C) – 2, – 4, – 6, – 8 (D) – 2, – 4, – 8, –16

6. If the 2nd term of an AP is 17 and the 5th term is 26, what is its 7th term?
(A) 30 (B) 32 (C) 37 (D) 38

7.The sum of first six multiples of 3 is
(A) 63 (B) 55 (C) 65 (D) 75

8.If the numbers n – 2, 4n – 1 and 5n +2 are in AP, then the value of n is:
(A)- 1 (B) 2 (C) − 2 (D) 1

9.The n^{th} term of an A.P. is given by $a_n = 3 + 4n$. The common difference is
(a) 7 (b) 3 (c) 4 (d) 1

10.The quadratic equation has degree
(a) 0 (b) 1 (c) 2 (d) 3

11.The equation $(x - 2)^2 + 1 = 2x - 3$ is a
(a) linear equation (b) quadratic equation
(c) cubic equation (d) bi-quadratic equation

12.The quadratic equation whose one rational root is $3 + \sqrt{2}$ is
(a) $x^2 - 7x + 5 = 0$ (b) $x^2 + 7x + 6 = 0$
(c) $x^2 - 7x + 6 = 0$ (d) $x^2 - 6x + 7 = 0$

13.The roots of the equation $7x^2 + x - 1 = 0$ are
(a) real and distinct (b) real and equal
(c) not real (d) none of these

14.If in ΔABC, $\angle C = 90°$, then sin (A + B) =
(a) 0 (b) ½ (c) $1/\sqrt{2}$ (d) 1

15.sin 2B = 2 sin B is true when B is equal to
(a) 90° (b) 60° (c) 30° (d) 0°

16.In Δ ABC, right-angled at B, AB = 24 cm, BC = 7 cm. The value of tan C is:
(a)12/7 (b)24/7 (c)20/7 (d)7/24

17.$1-\cos^2 A$ is equal to:
(a)$\sin^2 A$ (b)$\tan^2 A$ (c)$1-\sin^2 A$ (d)$\sec^2 A$

18.If cos X = ⅔ then tan X is equal to:
(a) 5/2 (b)$\sqrt{(5/2)}$ (c)$\sqrt{5}/2$ (d)$2/\sqrt{5}$

19.The midpoints of a line segment joining two points A(2, 4) and B(-2, -4)
(a) (-2,4) (b) (2,-4) (c) (0, 0) (d) (-2,-4)

20.If the distance between the points A(2, -2) and B(-1, x) is equal to 5, then the value of x is:
(a)2 (b)-2 (c)1 (d)-1

21. The ratio in which the line segment joining the points P(-3, 10) and Q(6, – 8) is divided by O(-1, 6) is:
(a)1:3 (b)3:4 (c)2:7 (d)2:5

22.The area of a triangle with vertices A (3, 0), B (7, 0) and C (8, 4) is:
(A) 14 (B) 28 (C) 8 (D) 6

23.The mode and mean is given by 7 and 8, respectively. Then the median is:
(a)1/13 (b)13/3 (c)23/3 (d)33

24.The median of the data 13, 15, 16, 17, 19, 20 is:
(a)30/2 (b)31/2 (c)33/2 (d)35/2

25.If the sum of frequencies is 24, then the value of x in the observation:
x, 5,6,1,2, will be;
(a)4 (b)6 (c)8 (d)10

26.In ABC, Given that DE//BC, D is the midpoint of AB and E is a midpoint of AC. The ratio AE: EC is ____.

1. 1: 3
2. 1:1
3. 2:1
4. 1:2

27.△ ABC is such that AB = 3 cm, BC = 2 cm and CA = 2.5 cm.△ DEF is similar to △ABC. If EF = 4 cm, then the perimeter of △DEF is –

A. 7.5 cm
B. 15cm
C. 30cm
D. 22.5cm

28.If Δ ABC and Δ DEF are similar such that 2AB = DE and BC = 8 cm, then Find EF.

A. 16 cm
B. 12 cm
C. 8 cm
D. 4 cm

29.Areas of two similar triangles are 36 cm^2 and 100 cm^2. If the length of a side of the larger triangle is 20 cm, then the length of the corresponding side of the smaller triangle is:

E. (A) 12cm
F. (B) 13cm
G. (C) 14cm
H. (D) 15cm

30.A flag pole 18 m high casts a shadow 9.6 m long. Find the distance of the top of the pole from the far end of the shadow.

(A) 25.6
(B) 20.4
(C) 23.7
(D) 32.5

31.A tangent intersects the circle at:

(a)One point (b)Two distinct point
(c)At the circle (d)None of the above

32.If the angle between two radii of a circle is 110º, then the angle between the tangents at the ends of the radii is:

(a)90º (b)50º (c)70º (d)40º

33.AB is a chord of the circle and AOC is its diameter such that angle ACB = 50°. If AT is the tangent to the circle at the point A, then BAT is equal to

(a)65°
(b)60°
(c)50°
(d)40°

34.To divide a line segment PQ in the ratio 5 : 7, first a ray PX is drawn so that ∠QPX is an acute angle and then at equal distances points are marked on the ray PX such that the minimum number of these points is

(a) 5 (b) 7 (c) 12 (d) 10

35.To construct a triangle similar to a given ΔABC with its sides 8/5 of the corresponding sides of ΔABC draw a ray BX such that ∠CBX is an acute angle and X is on the opposite side of A with respect to BC. The minimum number of points to be located at equal distances on ray BX is:

(A) 5 (B) 8 (C) 13 (D) 3

36.An iron rod of diameter 1cm and length 8cm is drawn into a wire of length 18m of uniform thickness. Find the thickness of the wire?

A. 0.09cm
B. 0.08cm
C. 0.06cm
D. 0.05cm

37.Ram has a semicircular disc. He rotates it about its diameter by 360 degrees. When he rotates the disc, a volume of air in his room gets swept. What is the name of the object/shape that exactly occupies this volume?

A. Cylinder
B. Hemisphere
C. Sphere
D. Cuboid

38.A cylinder is moulded into the shape of a sphere. Which of the following factors will be same for both the shapes?

A. None of these
B. Curved surface area
C. Surface area
D. Volume

39.How many gold coins of 1.75cm in diameter and 2mm in thickness can be melted to form a cuboid of dimensions 5.5cm x 10cm x 3.5cm?

A. 400

B. 500
C. 350
D. 550

40.What is a cylindrical pencil sharpened at one edge the combination of?

(a) a cone and a cylinder (b) a hemisphere and a cylinder
(c) two cylinders (d) frustum of a cone and a cylinder

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

IMPORTANT INSTRUCTIONS

1.Use only blue/black ball point pen to darken the circle for answer
ಉತ್ತರಗಳನ್ನು ಭರ್ತಿ ಮಾಡಲು ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಅನ್ನು ಉಪಯೋಗಿಸಿರಿ.

2.Do not make any rough work on this omr sheet
ಯಾವುದೇ ರೀತಿಯ ಕಚ್ಚಾಕೆಲಸವನ್ನು ಈ ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯ ಮೇಲೆ ಮಾಡಬಾರದು.

1.Do not fold, tear, wrinkle or staple on this OMR Sheet.
ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯನ್ನು ಮಡಚುವುದು, ಹರಿಯುವುದು ಅಥವಾ ಸ್ಟೆಪಲ್ ಪಿನ್ ಮಾಡಬಾರದು.

ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

REGISTER NUMBER :
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MEDIUM :
DATE OF EXAMINATIOIN :
PHYSICAL CONDITION :

PHOTO

QR CODE

If absent shade "AB"

Q.NO	ANSWER			
1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D

Q.NO	ANSWER			
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

Q.NO	ANSWER			
21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D
25	A	B	C	D
26	A	B	C	D
27	A	B	C	D
28	A	B	C	D
29	A	B	C	D
30	A	B	C	D

Q.NO	ANSWER			
31	A	B	C	D
32	A	B	C	D
33	A	B	C	D
34	A	B	C	D
35	A	B	C	D
36	A	B	C	D
37	A	B	C	D
38	A	B	C	D
39	A	B	C	D
40	A	B	C	D

Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

Minority welfare department
Directorate of minorities
Practice paper-02

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. The 10^{th} term of the arithmetic progression 5, 9, 13, ... is

A) 36 *B) 41* *C) 31* *D) 21*

2. If the n^{th} term of an A.P is $a_n = 5n - 3$ then the 5^{th} term is

A) 21 *B) 22* *C) 23* *D) 24*

3. If $2p + 1,\ 13,\ 5p - 3$ are in A.P then the value of 'p' is

A) 3 *B) 4* *C) 6* *D) 8*

4. In a progression if $a_n = 2n^2 + 1$ then S_2 is

A) 9 *B) 12* *C) 10* *D) 11*

5. The common difference of an A.P in which $a_{18} - a_{14} = 32$,

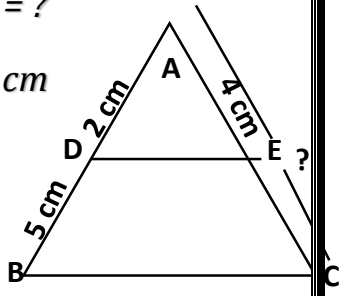
A) 4 *B) 6* *C) 8* *D) 10*

6. If two triangles are similar such that the ratio of their areas 36 : 121 then the ratio of their corresponding sides

A) 11 : 6 *B) 6 : 11* *C) 36 : 11* *D) 7 : 9*

7. In Δ ABC, DE ∥ BC. If AD = 2 cm, DB = 5 cm and AE = 4 cm then AC = ?

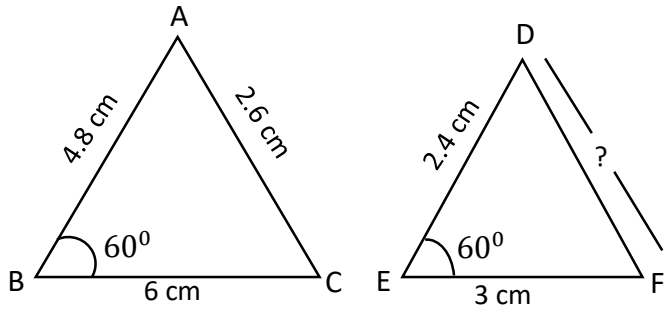
A) 8 cm *B) 10 cm* *C) 20 cm* *D) 12 cm*



8. Which of the following measures represent the sides of a right-angled triangle?

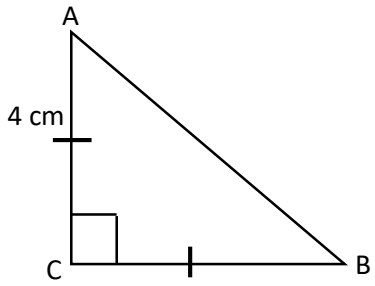
A) 6, 8, 9 *B) 3, 4, 6* *C) 7, 8, 9* *D) 6, 8, 10*

9. In the given figure $\Delta ABC \sim \Delta DEF$ and $\angle ABC = \angle DEF = 60^0$ then the length of DF is



A) 5 cm *B) 5.2 cm* *C) 6.2 cm* *D) 4.6 cm*

10. In the figure ABC is an isosceles triangle. Right angled at C with AC = 4 cm. find the length of AB.



A) $4\sqrt{2}$ cm *B) $5\sqrt{2}$ cm* *C) $6\sqrt{2}$ cm* *D)$4\sqrt{3}$ cm*

11. The value of 'k' for which pair of linear equations $x + y - 4 = 0$ & $2x + ky = 3$ has no solution is

A) -2 *B) 2* *C) 3* *D) 4*

12. The lines represented by $x + 2y - 4 = 0$ & $2x + 4y - 12 = 0$ are

A) Intersecting the lines *B) Parallel lines*

C) Perpendicular line to each other *D) Coincident lines*

13. If a pair of linear equations represented by lines has one solution then the what kind of lines are these

A) Lines are intersecting *B) Lines are parallel*

C) Lines are coinciding *D) Lines are perpendicular*

14. The value of x & y when a point lies on the linear equation $2x - y = 2$.

A) (1, 1) *B) (2, 2)* *C) (3, 3)* *D) (0, 1)*

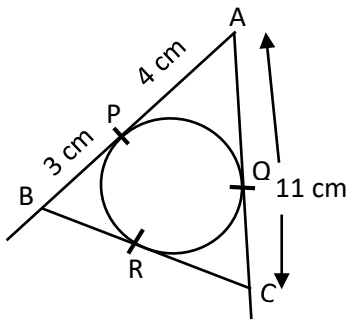
15. In figure ΔABC is circumscribing a circle the length of BC is _____cm.

A) 10 cm

B) 11 cm

C) 12 cm

D) 13 cm



16. A straight line which intersects the circle at only point is ____

A) Radius *B) Tangent* *C) Secant* *D) Line segment*

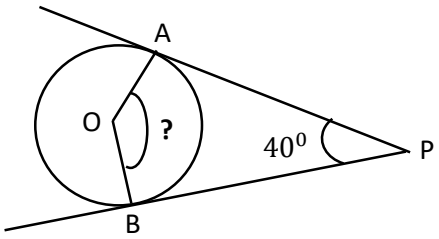
17. In the figure 'O' is the Centre of the circle PA and PB are the tangents to the circle. If $\angle APB = 40^0$ *then the measure of* $\angle AOB$ *is*

A) 120^0

B) 140^0

C) 160^0

D) 90^0



18. The length of a tangent from a point at distance 5 cm from the Centre of the

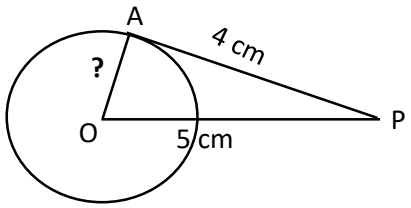
circle is 4cm. then the radius of the circle is

A) 2 cm

B) 3 cm

C) 4 cm

D) 6 cm



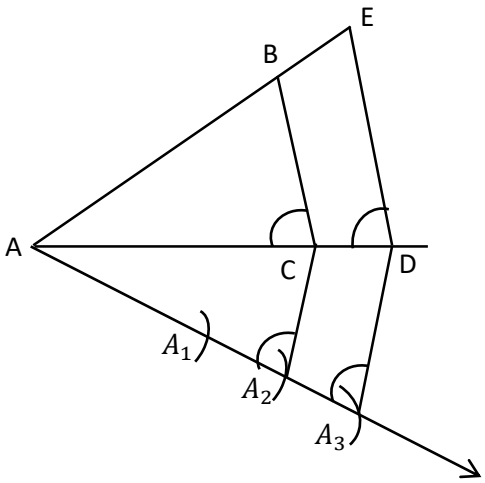
19. A student constructed a Δ ABC with sides AB = 4 cm, BC = 5 cm , AC = 6 cm and then constructed a ΔADE similar to ΔABC. Such that each of sides are $\frac{2}{3}$ *of the corresponding sides of ΔABC. The length of AE & AD obtained by calculations are respectively equal to*

A) 5 cm & 4.5 cm

B) 6 cm & 9 cm

C) 7 cm & 8 cm

D) 8 cm & 9 cm



20. The distance between origin and the point (p, q) is

A) $\sqrt{p^2 + q^2}$ *B)* $\sqrt{p^2 - q^2}$ *C)* $\sqrt{p - q}$ *D)* $\sqrt{p + q}$

21. The points $(-5,\ 1), (\ 1,\ p\ )$ *and* $(\ 4,\ -2\ )$ *are collinear if the value of 'p' is*

A) 3 *B)* 2 *C)* 1 *D)* -1

22. The co-ordinates of the mid-point of the line joining the points $(x_1,\ y_1)$ *and* $(x_2,\ y_2)$ *is*

A) $\left(\frac{x_1 - x_2}{2}, \frac{y_1 - y_2}{2}\right)$

B) $\left(\frac{x_2 - x_1}{2}, \frac{y_2 - y_1}{2}\right)$

C) $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

D) $\left(\frac{x_1 + y_1}{2}, \frac{x_2 + y_2}{2}\right)$

23. In the graph, the length of AB is

A) $4\sqrt{2}$ cm

B) $5\sqrt{2}$ cm

C) $3\sqrt{2}$ cm

D) $3\sqrt{3}$ cm

24. The nature of the roots of the quadratic equation $4x^2 - 4x + 1 = 0$ has equal roots

A) two distinct real roots B) two equal real roots

C) no real roots D) irrational

25. The value of 'p' for which the quadratic equation $x^2 - px + 16 = 0$ has equal roots

A) $p = 6$ B) $p = 8$ C) $p = 10$ D) $p = 12$

26. One root of the quadratic equation $(x + 5)(2x + 3) = 0$ is $-\frac{3}{2}$, then the other root is

A) 5 B) -5 C) $\frac{2}{3}$ D) $-\frac{2}{3}$

27. The product of two consecutive positive integer is 306. Represent it in the Form of quadratic equation

A) $x^2 + x - 306 = 0$

B) $x^2 - x + 306 = 0$

C) $x^2 + x + 306 = 0$

D) $x^2 - x - 306 = 0$

28. If $\sin A = \frac{4}{5}$, then the value of cosec A is

A) $\frac{5}{4}$ B) $\frac{6}{5}$ C) $\frac{3}{5}$ D) $\frac{4}{3}$

29. $\sin(90 - \theta)$ is equal to

A) $\cos\theta$ B) $\tan\theta$ C) $\cot\theta$ D) $\sec\theta$

30. The value of $\sin^2 60^0 - \cos^2 60^0$ is

A) $-\frac{1}{2}$ B) $\frac{3}{4}$ C) $\frac{1}{2}$ D) $\frac{1}{4}$

31. Given that $\sin\theta = \frac{a}{b}$ then $\tan\theta =$

A) $\frac{b}{\sqrt{b^2-a^2}}$ B) $\frac{\sqrt{b^2-a^2}}{b}$ C) $\frac{a}{\sqrt{b^2-a^2}}$ D) $\frac{\sqrt{b^2-a^2}}{a}$

32. In ΔABC right angled at B, AB = 5 cm and $\angle ACB = 30^0$. Then the length of the side BC is

A) $5\sqrt{3}$ B) $2\sqrt{3}$ C) 10 cm D) none of the above

33. Empirical relationship between the three measures of central tendency

A) 3 median = mode + 2 mean B) median = 3 mode + 2 mean

C) 3 mode = median – 2 mean D) mean = mode + 2 median

34. In the given frequency distribution table the median class is

C.I	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40
f	2	3	6	4	5

A) 20 – 25 B) 25 – 30 C) 30 – 35 D) 15 – 20

35. The mean of the score 7, 6, 5 , 0, 7, 8, 9 is

A) 5 B) 7 C) 6 D) 8

36. The surface area of a sphere of radius 7 cm is

A) $514\ cm^2$ B) $270\ cm^2$ C) $616\ cm^2$ D) $704\ cm^2$

37. The formula to find the TSA of a right circular cylinder.

A) $\prod r\,l$ B) $\prod\ r^2 l$ C) $2\prod r\,l$ D) $2\prod\ r\,(r+h)$

38. The mathematical relation between slant height (l) , height (h), & radius (r) of a cone

A) $l=\sqrt{h^2+r^2}$ B) $l=\sqrt{h^2-r^2}$ C) $h=\sqrt{l^2+r^2}$ D) $l=\sqrt{h+r}$

39. If the Area of the circular base of a cylinder is $22\ cm^2$ and its height is 10 cm then the volume of cylinder is

A) $110\ cm^3$ B) $220\ cm^3$ C) $330\ cm^2$ D) $220\ cm^2$

40. The curved surface area of a solid hemisphere of radius 'r' is

A) $4\prod\ r^2$ B) $2\prod\ r^2$ C) $\frac{4}{3}\prod\ r^3$ D) $3\prod\ r^2$

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OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

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2.Do not make any rough work on this omr sheet
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ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

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GENDER :
DISTRICT CODE/NAME :
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CENTER CODE/ADDRESS :
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PHYSICAL CONDITION :

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If absent shade "AB"

Q.NO	ANSWER			
1	A	B	C	D
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36	A	B	C	D
37	A	B	C	D
38	A	B	C	D
39	A	B	C	D
40	A	B	C	D

Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

Minority welfare department
Directorate of minorities
Practice paper-03

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. Graphically, the pair of equations 15x – 27y + 10 = 0 and 5x – 9y + 13 = 0 represents two lines which are
   (a) intersecting at exactly one point
   (b) intersecting exactly two points
   (c) coincident
   (d) parallel
2. The pair of equations x = a and y = b graphically represents lines which are
   (a) parallel (b) intersecting at (b, a)
   (c) coincident (d) intersecting at (a, b)
3. If x = m and y = n is the solution of the equations : 8 x- 8y = 16 and 7x + 7y = 28, then the values of m and n are, respectively
   (a) 3 and 5 (b) 5 and 3 (c) 3 and 1 (d) – 1 and – 3.
4. One equation of a pair of dependent linear equations is 6x + 10y = 6 The second equation will be
   (a) 2x + 5y = 6 (b) 3x + 5y = 3
   (c) -10x – 25y + 15 = 0 (d) 10x + 25y = 15
5. In an AP, if d = –4, n = 7, a_n = 4, then a is
   (A) 6 (B) 7 (C) 20 (D) 28
6. If the 2nd term of an AP is 13 and the 5th term is 25, what is its 7th term?
   (A) 30 B) 33 (C) 37 (D) 38
7. In an AP, if a = 3.5, d = 0, n = 101, then a_n will be
   (A) 0 (B) 3.5 (C) 103.5 (D) 104.5
8. The sum of first 16 terms of the AP: 10, 6, 2,... is
   (A) –320 (B) 320 (C) –352 (D) –400
9. In an AP if a = 1, a_n = 20 and S_n = 399, then n is
   (A) 19 (B) 21 (C)38 (D) 42
10. If 1/2 is a root of the equation $x^2 + kx – (5/4) = 0$ then the value of k is
    (A) 2 (B) – 2 (C) 3 (D) –3

10. A natural number, when increased by 12, equals 160 times its reciprocal. the number.
(A) 3 (B) 8 (C) 4 (D) 7

12. If the one root of the equation $4x^2 - 2x + p - 4 = 0$ be the reciprocal of other. Then value of p is
(A) 8 (B) – 8 (C) – 4 (D) 4

13. The roots of quadratic equation $5x^2 - 4x + 5 = 0$ are
(A) Real & Equal (B) Real & Unequal (C) Not real (D) Non-real and equal

14. In right triangle ABC, right angled at C, if tan A = 1, then the value of 2 sin a cos A is
(a) 0 (b) 1 (c) – 1 (d) 2

15. If $\cos A + \cos^2 A = 1$, then $\sin^2 A + \sin 4 A$ is
(a) -1 (b) 0 (c) 1 (d) 2

16. If cosec A - cot A = 4/5, then cosec A = ----------
(a) 47/40 (b) 59/40 (c) 51/40 (d) 41/40

17. 14. If $\alpha + \beta = 90°$ and $\alpha = 2\beta$ then $\cos 2\alpha + \sin 2\beta$ equal :
(a) 1 (b) zero (c) ½ (d) 2

18. The value of $\cos^2 17° - \sin^2 73°$ is
(a) 0 (b) 1 (c) -1 (d) 3

19. The area of the triangle whose vertices are A(1, 2), B(-2, 3) and C(-3, -4) is
(a) 11 (b) 22 (c) 33 (d) 21

20. The line 3x + y – 9 = 0 divides the line joining the points (1, 3) and (2, 7) internally in the ratio
(a) 3 : 4 (b) 3 : 2 (c) 2 : 3 (d) 4 : 3

21. If the distance between the points (x, -1) and (3, 2) is 5, then the value of x is
(a) -7 or -1 (b) -7 or 1 (c) 7 or 1 (d) 7 or -1

22. The coordinates of the centroid of a triangle whose vertices are (0, 6), (8,12) and (8, 0) is
(a) (4, 6) (b) (16, 6) (c) (8, 6) (d) (16/3, 6)

23. If the arithmetic mean of x, x + 3, x + 6, x + 9 and x + 12 is 10, then x = ?
(A) 1 (B) 2 (C) 6 (D) 4

24. For one term, absentee record of students is given below. If mean is 15.5, then the missing frequencies x and y are:

Number of days	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	TOTAL

Total Number of students	15	16	X	8	y	8	6	4	70

(A) x = 4 and y = 3 (B) x = 7 and y = 7 (C) x = 3 and y = 4 (D) x = 7 and y = 6

25.Pocket expenses of a class in a college are shown in the following frequency distribution:

Pocket expenses	0-200	200-400	400-600	600-800	800-1000	1000-1200	1200-1400
Number of students	33	74	170	88	76	44	25

Then the median for the above data is:

(A) 485.07 (B) 486.01 (C) 487.06 (D) 489.03

26. D and E are respectively the points on the sides AB and AC of a triangle ABC such that AD = 2 cm, BD = 3 cm, BC = 7.5 cm and DE || BC. Then, length of DE(in cm) is

(a) 2.5 (b) 3 (c) 5 (d) 6

27. ABC and BDE are two equilateral triangles such that D is mid-point of BC. Ratio of the areas of triangles ABC and BDE is

(a) 2 : 1 (b) 1:4 (c) 1:2 (d) 4:1

28. Sides of triangles are (i) 3 cm, 4 cm, 6 cm. (ii) 4 cm, 5 cm, 6 cm. (iii) 7 cm, 24 cm, 25 cm (iv) 5 cm, 12 cm, 14 cm. Which of these is right triangle?

(a) (i) (b) (ii) (c) (iii) (d) (iv)

29. If in two Δs ABC and DEF, AB/DF=BC/FE=CA/ED, then

(a) ΔABC ~ ΔDEF (b) ΔABC ~ ΔEDF

(c) ΔABC ~ ΔEFD (d) ΔABC ~ ΔDFE

30. Areas of two similar triangles are 36 cm^2 and 100 cm^2. If the length of a side of the larger triangle is 20 cm, then the length of the corresponding side of the smaller triangle is:

(A) 12cm (B) 13cm (C) 14cm (D) 15cm

31. If angle between two tangents drawn from a point P to a circle of radius 'a' and centre 'O' is 90°, then OP = ----------

(A) $2a\sqrt{2}$ (B) $a\sqrt{2}$ (C) $a/\sqrt{2}$ (D) $5a\sqrt{2}$

32. If d_1, d_2 ($d_2 > d_1$) be the diameters of two concentric circles and c be the length of a chord of a circle which is tangent to the other circle, then

(A) $d_2^2 = c^2 + d_1^2$ (B) $d_2^2 = c^2 - d_1^2$

(C) $d_1^2 = c^2 + d_2^2$ (D) $d_1^2 = c^2 - d_2^2$

33. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm, then length of each tangent is equal to

(A) $2\sqrt{3}$ cm (B) $6\sqrt{3}$ cm

(C) $3\sqrt{3}$ cm (D) 3 cm

34. To construct a pair of tangents to a circle at an angle of 60° to each other, it is needed to draw tangents at endpoints of those two radii of the circle, the angle between them should be:

(a)100 (b)90 (c)180 (d)120

35. To draw a pair of tangents to a circle which are inclined to each other at an angle of 45°, it is required to draw tangents at the endpoints of those two radii of the circle, the angle between which is:

(a)135 (b)155 (c)160 (d)120

36. Volumes of two spheres are in the ratio 64:27. The ratio of their surface areas is:

(A) 3 : 4 (B) 4 : 3 (C) 9 : 16 (D) 16 : 9

37.A metallic spherical shell of internal and external diameters 4 cm and 8 cm respectively, is melted and recast into the form of a cone with base diameter 8cm. The height of the cone is

(A) 12cm (B) 14cm (C) 15cm (D) 18cm

38. During conversion of a solid from one shape to another, the volume of the new shape will

(A) increase (B) decrease (C) remain unaltered (D) be doubled

39. The lateral surface area of a right circular cone of height 28 cm and base radius 21 cm(in sq. cm) is:

a)2310 b)2110 c)1055 d)1155

40. A bucket is in the form of a frustum of a cone, its depth is 15 cm and the diameters of the top and the bottom are 56 cm and 42 cm respectively. How many liters of water can the bucket hold?

a)28.49 b)7.5 c)2.5 d)10

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

IMPORTANT INSTRUCTIONS

1.Use only blue/black ball point pen to darken the circle for answer
ಉತ್ತರಗಳನ್ನು ಭರ್ತಿ ಮಾಡಲು ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಅನ್ನು ಉಪಯೋಗಿಸಿರಿ.

2.Do not make any rough work on this omr sheet
ಯಾವುದೇ ರೀತಿಯ ಕಚ್ಚಾಕೆಲಸವನ್ನು ಈ ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯ ಮೇಲೆ ಮಾಡಬಾರದು.

1.Do not fold, tear, wrinkle or staple on this OMR Sheet.
ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯನ್ನು ಮಡಚುವುದು, ಹರಿಯುವುದು ಅಥವಾ ಸ್ಟೆಪಲ್ ಪಿನ್ ಮಾಡಬಾರದು.

ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

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Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

Minority welfare department
Directorate of minorities
Practice paper-04

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. If the nth term of the A.P is a_n=4n-1, then the fourth term is …….
   a. 10 b. 11 c. 13 d. 15
2. A pair of linear equations $a_1x+b_1y+c_1=0$, $a_2x+b_2y+c_2=0$ is said to be consistent, if
   a. $\frac{a1}{a2} \neq \frac{b1}{b2}$ b. $\frac{a1}{a2} = \frac{b1}{b2} \neq \frac{c1}{c2}$ c. $\frac{a1}{a2} = \frac{b1}{b2} = \frac{c1}{c2}$ d. $\frac{a1}{a2} \neq \frac{c1}{c2}$
3. Graphically, the pair of equations 3x-5y=7 & 6x+10y=7 have ……
   a. A unique solution c. infinitely many solutions
   b. No solution d. two solutions
4. The pair of equation x=-4 & y=-5 graphically represents lines which are ….
   a. Intersecting at (-5, -4) c. Intersecting at (5, 4)
   b. Intersecting at (-4, -5) d. Intersecting at (4, 5)
5. For what value of k, do the equations 2x-3y+10=0 & 3x+ky+15=0 represent coincident lines
   a. $(-\frac{9}{2})$ b. -11 c. $\frac{9}{2}$ d. -7
6. If p, q, r & s are in A.P then r-q is
   a. S-p b. s-q c. s-r d. none of these
7. If the sum of three numbers are in A.P is 9 & their product is 24, then numbers are
   a. 2, 4, 6 b. 1, 5, 3 c. 2, 8, 4 d. 2, 3, 4
8. The nth term of an A.P 5, 2, -1, -4, -7 …… is
   a. 2n+5 b. 2n-5 c. 8-3n d. 3n-8
9. The 10^{th} term from the end of the A.P -5, -10, -15, ……. -1000 is ……..
   a. -955 b. -945 c. -950 d. -965
10. The quadratic equation has degree is ……
    a. 0 b. 1 c. 2 d. 3

11. The roots of the quadratic equation $6x^2-x-2=0$ are…….
    a. $\frac{2}{3}, \frac{1}{2}$ b. $-\frac{2}{3}, \frac{1}{2}$ c. $\frac{2}{3}, -\frac{1}{2}$ d. $-\frac{2}{3}, -\frac{1}{2}$
12. The equation $2x^2+kx+3=0$ has two equal roots, then the value of k is ……..
    a. $\pm\sqrt{6}$ b. ±4 c. $\pm3\sqrt{2}$ d. $\pm2\sqrt{3}$
13. The sum of the roots of the quadratic equation $3x^2-9x+5=0$ is ……
    a. 3 b. 6 c. -3 d. 2
14. If A & $(2A-45^0)$ are acute angles such that sin A= Cos $(2A-45^0)$, then tan A is equal to
    a. 0 b. $\frac{1}{\sqrt{3}}$ c. 1 d. $\sqrt{3}$
15. If in ΔABC, ∟C= 900, then sin (A+B)= ……..
    a. 0 b. $\frac{1}{2}$ c. $\frac{1}{\sqrt{2}}$ d. 1
16. What is the maximum value of $\frac{1}{\cos A}$?
    a. 0 b. 1 c. $\frac{1}{2}$ d. 2
17. If sin A – Cos A=0, Then the value of sin4A+Cos 4A is …..
    a. 2 b. 1 c. $\frac{3}{4}$ d. $\frac{1}{2}$
18. If radii of two concentric circles are 4cm and 5cm, then the length of each chord of one circle which is tangent to the other circle is …….
    a. 3cm b. 6cm c. 9cm d. 1cm
19. Number of tangents to a circle which are parallel to a secant is ……..
    a. One b. two c. three d. four
20. The distance of the point P(2, 3) from the x-axis is…
    (a) 2 (b) 3 (c) 1 (d) 5
21. The points (-5, 1), (1, p) and (4, -2) are collinear if the value of p is…
    (a) 3 (b) 2 (c) 1 (d) -1
22. The area of the triangle ABC with the vertices A(-5, 7), B(-4, -5) and C(4, 5) is
    (a) 63 (b) 35 (c) 53 (d) 36
23. The distance of the point (α, β) from the origin is…….
    (a) α + β (b) $\alpha^2 + \beta^2$ (c) |α| + |β| (d) $\sqrt{\alpha 2 + \beta 2}$
24. The mode and mean is given by 7 and 8, respectively. Then the median is:
    (a)1/13 (b)13/3 (c)23/3 (d)33

25. The mean of the data: 4, 10, 5, 9, 12 is;
(a)8 (b)10 (c)9 (d)15

26. The class interval of a given observation is 10 to 15, then the classmark for this interval will be:
(a)11.5 (b)12.5 (c)12 (d)14

27. The mode values comes under the size of following distribution is:

C.I	0-10	10-20	20-30	30-40	40-50	50-60
f	1	2	3	4	3	2

a)20-30 b)30-40 c)40-50 d)50-60

28. Area of an equilateral triangle with side length a is equal to:
(a)$\sqrt{3}/2a$ (b)$\sqrt{3}/2a^2$ (c)$\sqrt{3}/4\ a^2$ (d)$\sqrt{3}/4\ a$

29. D and E are the midpoints of side AB and AC of a triangle ABC, respectively and BC=6cm. If DE || BC, then the length of DE is:
(a)2.5 (b)3 (c)5 (d)6

30. Corresponding sides of two similar triangles are in the ratio of 2:3. If the area of small triangle is 48 sq.cm, then the area of large triangle is:
(a)230 sq.cm. (b)106 sq.cm (c)107 sq.cm. (d)108 sq.cm

31. If triangles ABC and DEF are similar and AB=4cm, DE=6cm, EF=9cm and FD=12cm, the perimeter of triangle is:
(a)22cm (b)20cm (c)21cm (d)18cm

32. To divide a line segment AB in the ratio 3:4, first, a ray AX is drawn so that ∠BAX is an acute angle and then at equal distances points are marked on the ray AX such that the minimum number of these points is:
(a)5 (b)7 (c)9 (d)11

33. To construct a pair of tangents to a circle at an angle of 60° to each other, it is needed to draw tangents at endpoints of those two radii of the circle, the angle between them should be:
(a)100 (b)90 (c)180 (d)120

34. To draw a pair of tangents to a circle which are inclined to each other at an angle of 45°, it is required to draw tangents at the endpoints of those two radii of the circle, the angle between which is:
(a)135 (b)155 (c)160 (d)120

35. A pair of tangents can be constructed from a point P to a circle of radius 3.5 cm situated at a distance of _____ from the centre.
(a)3.5 (b)2.5 (c)5 (d)2

36. The shape of an ice-cream cone is a combination of:
(a)Sphere+cylinder (b)Sphere+cone
(c)Hemisphere+cylinder (d)Hemisphere+cone

37. If r is the radius of the sphere, then the surface area of the sphere is given by;
(a)$4\pi r^2$ (b)$2\pi r^2$ (c)πr^2 (d)$4/3\pi r^2$

38. The radius of the top and bottom of a bucket of slant height 35 cm are 25 cm and 8cm. The curved surface of the bucket is:
(a)4000 sq.cm (b)3500 sq.cm (c)3630 sq..cm
(d)3750 sq.cm

39. A tank is made of the shape of a cylinder with a hemispherical depression at one end. The height of the cylinder is 1.45 m and radius is 30cm. The total surface area of the tank is:
(a)30m (b)3.3m (c)30.3m (d)3300m

40. If we join two hemispheres of same radius along their bases, then we get a;
(a)Cone (b)Cylinder (c)Sphere (d)Cuboid

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

IMPORTANT INSTRUCTIONS

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ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

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SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

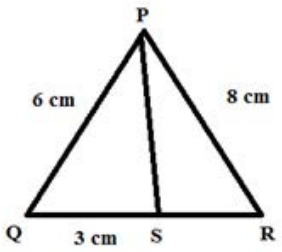
Minority welfare department
Directorate of minorities
Practice paper-05

Subject: Mathematics **max.marks:40**

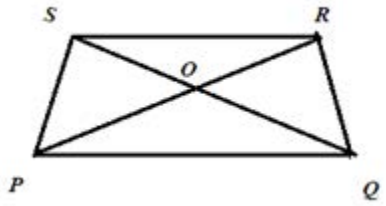
Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. The sum of the first 15 multiples of 8 is…….
   (a) 920 (b) 860 (c) 900 (d) 960
2. Next term of the AP $\sqrt{2}, 3\sqrt{2}, 5\sqrt{2}, \ldots\ldots$ Is
   (a) $2\sqrt{7}$ (b) $6\sqrt{2}$ (c) $9\sqrt{2}$ (d) $7\sqrt{2}$
3. First four terms of the sequence $a_n = 2n + 3$ are
   (a) 3, 5, 7, 9 (b) 5, 7, 9, 11 (c) 5, 8, 11, 14 (d) 1, 3, 5, 7
4. 20th term of the AP -5, -3, -1, 1, is
   (a) 33 (b) 30 (c) 20 (d) 25
5. D and E are respectively the midpoints on the sides AB and AC of a triangle ABC and BC = 6 cm. If DE || BC, then the length of DE (in cm) is
   (A) 2.5 (B) 3 (C) 5 (D) 6
6. In triangle PQR, if PQ = 6 cm, PR = 8 cm, QS = 3 cm, and PS is the bisector of angle QPR, what is the length of SR?
   (A) 2 (B) 4 (C) 6 (D) 8

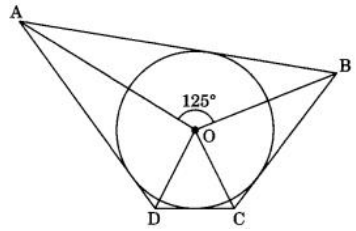


7. A flag pole 18 m high casts a shadow 9.6 m long. Find the distance of the top of the pole from the far end of the shadow.
   (A) 25.6 (B) 20. (C) 23.7 (D) 32.5
8. Diagonals of a trapezium PQRS intersect each other at the point O, PQ || RS and PQ = 3 RS, Then the ratio of areas of triangles POQ and ROS is:



(A) 1:9 (B) 9:1 (C)3:1 (D) 1:3

9. Graphically, the pair of equations
   $6x - 3y + 10 = 0$
   $2x - y + 9 = 0$
   Represents two lines which are:
   (A) Intersecting at exactly one point.
   (B) Intersecting at exactly two points.
   (C) Coincident.
   (D) Parallel
10. The pair of equations $x + 2y - 5 = 0$ and $-3x - 6y + 15 = 0$ have:
   (A) A unique solution
   (B) Exactly two solutions
   (C) Infinitely many solutions
   (D) No solution
11. The pair of equations $y = 0$ and $y = -7$ has
   (A) One solution
   (B) Two solutions
   (C) Infinitely many solutions
   (D) No solution
12. The value of c for which the pair of equations $cx - y = 2$ and $6x - 2y = 3$ will have infinitely many solutions is
   (A) 3 (B) – 3 (C) –12 (D) no value
13. If radii of two concentric circles are 4 cm and 5 cm, then the length of each chord of one circle which is tangent to the other circle is
   (a) 3 cm (b) 6 cm (c) 9 cm (d) 1 cm
14. In Fig., if $\angle AOB = 125°$, then $\angle COD$ is equal to



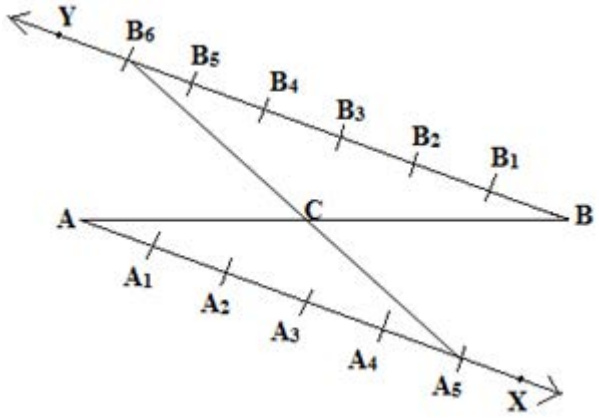
(a) 62.5° (b) 45° (c) 35° (d) 55°

15. At one end A of a diameter AB of a circle of radius 5 cm, tangent XAY is drawn to the circle. The length of the chord CD parallel to XY and at a distance 8 cm from A is
(a) 4 cm (b) 5 cm (c) 6 cm (d) 8 cm

16. To divide a line segment AB in the ratio 5 : 7, first a ray AX is drawn so that ∠BAX is an acute angle and then at equal distances points are marked on the ray AX such that the minimum number of these points is
(a) 8 (b) 10 (c) 11 (d) 12

17. To divide a line segment AB in the ratio 4 : 7, ray AX is drawn first such that ∠BAX is an acute angle and then points A_1, A_2, A_3,…… are located at equal distances on the ray AX and the point B is joined to
(a) A_{12} (b) A_{11} (c) A_{10} (d) A_9

18. To divide a line segment AB in the ratio 5 : 6, draw a ray AX such that ∠BAX is an acute angle, then draw a ray BY parallel to AX and the points A_1, A_2, A_3, ... and B_1, B_2, B_3, ... are located at equal distances on ray AX and BY, respectively. Then the points joined are….



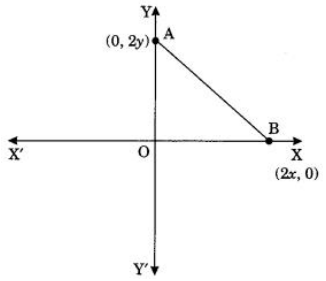
(A) A_5 and B_6
(B) A_6 and B_5
(C) A_4 and B_5
(D) A_5 and B_4

19. The distance between the points A(0, 6) and B(0, -2) is
(a) 6 (b) 8 (c) 4 (d) 2

20. AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0). The length of its diagonal is
(a) 5 (b) 3 (c) $\sqrt{34}$ (d) 4

21. The perimeter of a triangle with vertices (0, 4), (0, 0) and (3, 0) is
(a) 5 (b) 12 (c) 11 (d) $7 + \sqrt{5}$

22. The coordinates of the point which is equidistant from the three vertices of the ΔAOB as shown in the figure.



(a) (x, y) (b) (y, x) (c) (x/2, y/2) (d) (y/2, x/2)

23. The roots of quadratic equation $5x^2 - 4x + 5 = 0$ are
(A) Real & Equal (B) Real & Unequal
(C) Not real (D) Non-real and equal

24. Equation $(x+1)^2 - x^2 = 0$ has _____ real root(s).
(A) 1 (B) 2 (C) 3 (D) 4

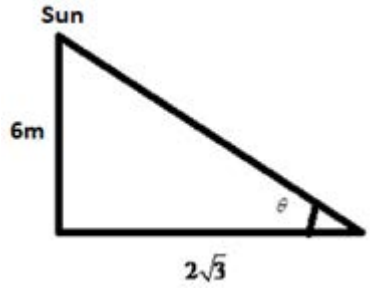
25. If 1/2 is a root of the equation $x^2 + kx - (5/4) = 0$ then the value of k is…
(A)2 (B) – 2 (C)3 (D) –3

26. A natural number, when increased by 12, equals 160 times its reciprocal. Find the number.
(A) 3 (B) 8 (C) 4 (D) 7

27. If cos A = 4/5, then tan A = ?
(A) 3/5 (B) ¾ (C) 4/3 (D) 4/5

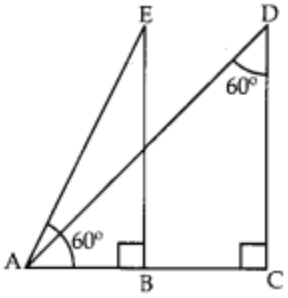
28. The value of the expression [cosec (75° + θ) – sec (15° - θ) – tan (55° + θ) + cot (35° - θ)] is
(A) 1 (B) –1 (C) 0 (D) 1/2

29. If a pole 6m high casts a shadow $2\sqrt{3}$ m long on the ground, then the sun's elevation is



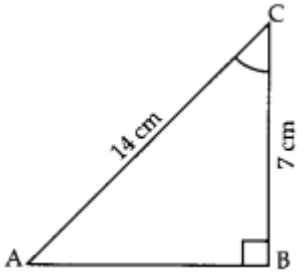
(A) 60° (B) 45° (C) 30° (D)90°

30. In given Fig., the angle of depression from the observing position D and E of the object at A are



(a) 60°, 60° (b) 30°, 30° (c) 30°, 60° (d) 60°, 30°

31. In given figure, the value of ZC is



(a) 90° (b) 45° (c) 30° (d) 60°

32. Mode is the
(a) middle most frequent value
(b) least frequent value
(c) maximum frequent value
(d) none of these

33. For the following distribution

C.I	0-5	6-11	12-17	18-23	24-29
f	26	20	30	16	22

the upper limit of the median class is
(a) 18.5 (b) 18 (c) 17.5 (d) 17

34. One of the methods for determining mode is
(a) Mode = 2 Median -3 Mean
(b) Mode = 3 Median – 2 Mean
(c) Mode = 2 Mean – 3 Median
(d) Mode = 3 Mean – 2 Median

35. Which of the following can not be determined graphically?
(a) Mean (b) Median (c) Mode (d) None of these

36. A cylindrical pencil sharpened at one edge is the combination of
(a) two cylinders
(b) a hemisphere and a cylinder

(c) a cone and a cylinder
(d) frustum of a cone and a cylinder

37. The slant height of the frustum of a cone having radii of two ends as 5 cm and 2 cm respectively and height 4 cm is
(a) $\sqrt{26}$ cm (b) 5 cm (c) $\sqrt{65}$ cm (d) 25 cm

38. The total surface area of a hemispherical solid having radius 7 cm is
(a) 462 cm^2 (b) 294 cm^2 (c) 588 cm^2 (d) 154 cm^2

39. A cylinder and a cone are of same base radius and of same height. The ratio of the volume of the cylinder to that of the cone is
(a) 2 : 1 (b) 3 : 1 (c) 2 : 3 (d) 3 : 2

40. If two solid hemispheres of same base radius are joined together along their bases, then curved surface area of this new solid is
(a) $3\pi r^2$ (b) $4\pi r^2$ (c) $5\pi r^2$ (d) $6\pi r^2$

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KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

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2.Do not make any rough work on this omr sheet
ಯಾವುದೇ ರೀತಿಯ ಕಚ್ಚಾಕೆಲಸವನ್ನು ಈ ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯ ಮೇಲೆ ಮಾಡಬಾರದು.

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ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

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DATE OF EXAMINATIOIN :
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PHOTO

QR CODE

If absent shade "AB"

Q.NO	ANSWER			
1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D

Q.NO	ANSWER			
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

Q.NO	ANSWER			
21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D
25	A	B	C	D
26	A	B	C	D
27	A	B	C	D
28	A	B	C	D
29	A	B	C	D
30	A	B	C	D

Q.NO	ANSWER			
31	A	B	C	D
32	A	B	C	D
33	A	B	C	D
34	A	B	C	D
35	A	B	C	D
36	A	B	C	D
37	A	B	C	D
38	A	B	C	D
39	A	B	C	D
40	A	B	C	D

Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

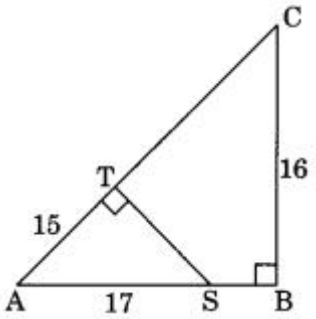
Minority welfare department
Directorate of minorities
Practice paper-06

Subject: Mathematics **max.marks:40**

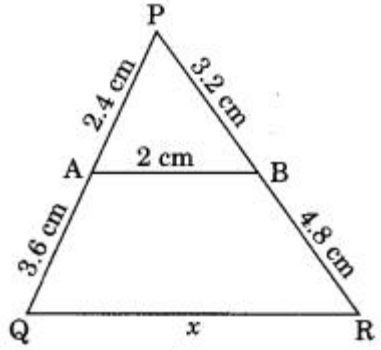
Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. In an AP, if d = –4, n = 7, a_n = 4, then a is…….
   (A) 6 (B) 7 (C) 20 (D) 28
2. The 21st term of the AP whose first two terms are –3 and 4 is
   (A) 17 (B) 137 (C) 143 (D) –143
3. If the common difference of an AP is 5, then what is $a_{18} - a_{13}$?
   (A) 5 (B) 20 (C) 25 (D) 30
4. The sum of first 16 terms of the AP: 10, 6, 2,... is
   (A) –320 (B) 320 (C) –352 (D) –400
5. In the given figure, ∠T and ∠B are right angles. If the length of AT, BC and AS (in centimeters) are 15, 16, and 17 respectively, then the length of TC (in centimeters) is:

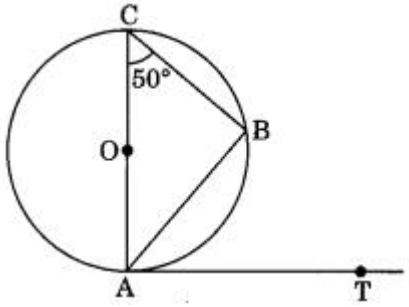


   (a) 18 (b) 16 (c) 19 (d) 12
6. In the given figure, value of x(in cm) is



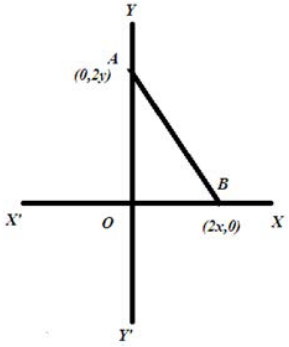
(a) 4 (b) 5 (c) 6 (d) 8

7. In ΔABC, if DE || BC, AD = x, DB = x – 2, AE = x + 2 and EC = x – 1, then value of x is
   (a) 3 (b) 4 (c) 5 (d) 3.5
8. If ΔABC is similar to ΔDEF such that 2 AB = DE and BC = 8 cm then EF is equal to.
   (a) 12 cm (b) 4 cm (c) 16 cm (d) 8 cm
9. The pair of linear equations x + 2y + 5 = 0 and -3x – 6y + 1 = 0 has
   (a) a unique solution
   (b) exactly two solutions
   (c) infinitely many solutions
   (d) no solutions
10. If a pair of linear equations is consistent, then the lines will be
    (a) parallel
    (b) always coincident
    (c) intersecting or coincident
    (d) always intersecting
11. For what value of k, for the equations 3x – y + 8 = 0 and 6x – ky = -16 represents coincident lines?
    (a) ½ (b) –1/2 (c) 2 (d) -2
12. Aruna has only Rs 1 and Rs 2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is Rs 75, then the number of Rs 1 and Rs 2 coins are respectively
    (a) 35 and 15 (b) 35 and 20
    (c) 15 and 35 (d) 25 and 25
13. If Fig., AB is a chord of the circle and AOC is its diameter such that ∠ACB = 50°. If AT is the tangent to the circle at the point A, the ∠BAT is equal to



    (a) 65° (b) 60° (c) 50° (d) 40°
14. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm the length of each tangent is equal to
    (a) $32\sqrt{3}$ cm (b) 6 cm (c) 3 cm (d) $3\sqrt{3}$ cm

15. There are …… tangents can be drawn from an external point to circle.
    a. 1 b. 2 c. 3 d. infinite
16. To divide a line segment PQ in the ratio 5 : 7, first a ray PX is drawn so that ∠QPX is an acute angle and then at equal distances points are marked on the ray PX such that the minimum number of these points is
    (a) 5 (b) 7 (c) 12 (d) 10
17. To draw a pair of tangents to a circle which are inclined to each other at an angle of 35°, it is required to draw tangents at the end-points of those two radii of the circle, the angle between which is
    (a) 145° (b) 130° (c) 135° (d) 90°
18. When a line segment is divided in the ratio 2 : 3, how many parts is it divided into?
    (a) 2/3 (b) 2 (c) 3 (d) 5
19. If the distance between the points (2, –2) and (–1, x) is 5, one of the values of x is
    (A) –2 (B) 2 (C) –1 (D)1
20. The mid-point of the line segment joining the points A (–2, 8) and B (– 6, – 4) is
    (A) (– 4, – 6) (B) (2, 6) (C) (– 4, 2) (D) (4, 2)
21. The distance of the point P (2, 3) from the x-axis is
    (A) 2 (B) 3 (C) 1 (D) 5
22. The coordinates of the point which is equidistant from the three vertices of the Δ AOB as shown in the figure is:



    (A) (x, y) (B) (y, x) (C) (x/2, y/2) (D) (y/2, x/2)
23. Which of the following is a quadratic equation?
    (a) $x^2 + 2x + 1 = (4 - x)^2 + 3$
    (b) $-2x^2 = (5 - x)[2x - 25]$
    (c) $(k + 1)x^2 + 32x = 7$, where $k = -1$
    (d) $x^3 - x^2 = (x - 1)^3$
24. Values of k for which the quadratic equation $2x^2 - kx + k = 0$ has equal roots is

(a) 0 only (b) 4 (c) 8 only (d) 0, 8

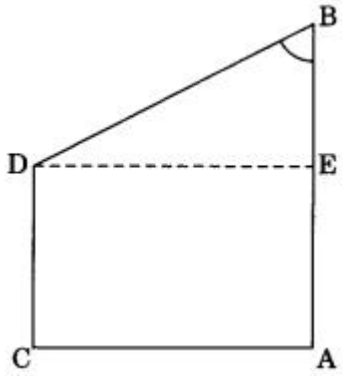
25. The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has
    (a) two distinct real roots
    (b) two equal real roots
    (c) no real roots
    (d) more than 2 real roots

26. If x tan 45° sin 30° = cos 30° tan 30°, then x is equal to
    (a) $\sqrt{3}$ (b) ½ (c) $\sqrt{1/2}$ (d) 1

27. If x and y are complementary angles, then
    (a) sin x = sin y (b) tan x = tan y
    (c) cos x = cos y (d) sec x = cosec y

28. If A and (2A – 45°) are acute angles such that sin A = cos (2A – 45°), then tan A is equal to
    (a) 0 (b) $1/\sqrt{3}$ (c) 1 (d) $\sqrt{3}$

29. In the given figure, if AB = 14 cm, BD = 10 cm and DC = 8 cm, then the value of tan B is



    (a) 4/3 (b) 14/3 (c) 5/3 (d) 13/3

30. If at some time, the length of the shadow of a tower is $\sqrt{3}$ times its height, then the angle of elevation of the sun, at that time is:
    (a) 15° (b) 30° (c) 45° (d) 60°

31. The angle of elevation of the top of a 15 m high tower at a point 15 m away from the base of tower is:
    (a) 30° (b) 60° (c) 45° (d) 75°

32. Two poles are 25 m and 15 m high and the line joining their tops makes an angle of 45° with the horizontal. The distance between these poles is:
    (a) 5 m (b) 8 m (c) 9 m (d) 10 m

33. ————— is not a measure of central tendency of a statistical data.
    A. Mean B. Range C. Mode D. Median

34. Cumulative frequency curve is also known as —————
    A. Ogives B. Frequency curve

C. Frequency polygon D. None of this

35. **The mean of the data: 4, 10, 5, 9, 12 is;**
(a)8 (b)10 (c)9 (d)15

36. A cone is cut through a plane parallel to its base and then the cone that is for medon one side of that plane is removed. The new part that is left over on the other side of the plane is called
(A) a frustum of a cone (B) cone
(C) cylinder (D) sphere

37. During conversion of a solid from one shape to another, the volume of the new shape will
(A) increase (B) decrease
(C) remain unaltered (D) be doubled

38. A metallic spherical shell of internal and external diameters 4 cm and 8 cm respectively, is melted and recast into the form of a cone with base diameter 8cm. The height of the cone is
(A) 12cm (B) 14cm (C) 15cm (D) 18cm

39. If two solid hemispheres of same base radii r, are joined together along their bases, then curved surface area of this new solid is
(A) $4\pi r^2$ (B) $6\pi r^2$ (C) $3\pi r^2$ (D) $8\pi r^2$

40. The radii of the top and bottom of a bucket of slant height 45cm are 28cm and 7 cm respectively. The curved surface area of the bucket is:
A) 4950 cm^2 (B) 4951 cm^2
(C) 4952 cm^2 (D) 4953 cm^2

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ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

MATHEMATICS

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CANDIDATE NAME :
GENDER :
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If absent shade "AB"

Q.NO	ANSWER			
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39	A	B	C	D
40	A	B	C	D

Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

Minority welfare department
Directorate of minorities
Practice paper-07

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1. The pair of equations x = a and y = b graphically represents lines which are
(a) parallel (b) intersecting at (b, a) (c) coincident (d) intersecting at (a, b)

2. If x=a, y=b is the solution of the pair of equation x-y=2 and x +y=4 then what will be value of a and b
(a) 2, 1 (b) 3, 1 (c) 4,6 (d) 1

3. A pair of linear equations $a_1x + b_1y + c_1 = 0$; $a_2x + b_2y + c_2 = 0$ is said to be inconsistent, if

(a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

(c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ (d) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$

4. Graphically, the pair of equations 7x – y = 5; 21x – 3y = 10 represents two lines which are
(a) intersecting at one point (b) parallel (c) intersecting at two points (d) coincident

5. The nth term of an A.P. is given by an = 3 + 4n. The common difference is
a. 7 b. 3 c. 4 d. 1

6. If the sum of three numbers in an A.P. is 9 and their product is 24, then numbers are
a) 2, 4, 6 (b) 1, 5, 3 (c) 2, 8, 4 (d) 2, 3, 4

7. The n^{th} term of an A.P. 5, 2, -1, -4, -7 … is
(a) 2n + 5 (b) 2n – 5 (c) 8 – 3n (d) 3n – 8

8. The sum of first n odd natural numbers is
(a) $2n^2$ (b) 2n + 1 (c) 2n – 1 (d) n^2

9. n^{th} term of the sequence a, a + d, a + 2d,... is
(a) a + n d (b) a – (n – 1)d (c) a + (n – 1)d (d) n + nd

10. Which of the following is not a quadratic equation
(a) $x^2 + 3x - 5 = 0$ (b) $x^2 + x3 + 2 = 0$ (c) $3 + x + x^2 = 0$ (d) $x^2 - 9 = 0$

11. The roots of the equation $7x^2 + x - 1 = 0$ are
(a) real and distinct (b) real and equal (c) not real (d) none of these

12. The sum of the squares of two consecutive natural numbers is 313. The numbers are
(a) 12, 13 (b) 13,14 (c) 11,12 (d) 14,15

13. The quadratic equation has degree
(a) 0 (b) 1 (c) 2 (d) 3

14. The value of tan 60°/cot 30° is equal to:
(a) 0 (b) 1 (c) 2 (d) 3

15. $1-\cos^2 A$ is equal to:
(a)$\sin^2 A$ (b)$\tan^2 A$ (c)$1-\sin^2 A$ (d)$\sec^2 A$

16. The value of sin 60° cos 30° + sin 30° cos 60° is:
(a)0 (b)1 (c)2 (d)4

17. sin 2B = 2 sin B is true when B is equal to
(a) 90° (b) 60° (c) 30° (d) 0

18. (Sin 30°+cos 60°)-(sin 60° + cos 30°) is equal to:
(a)0 (b)$1+2\sqrt{3}$ (c)$1-\sqrt{3}$ (d)$1+\sqrt{3}$

19.The distance of the point P(2, 3) from the x-axis is
(a) 2 (b) 3 (c) 1 (d) 5

20. The distance between the point P(1, 4) and Q(4, 0) is
(a) 4 (b) 5 (c) 6 (d) $3\sqrt{3}$

21. The area of the triangle ABC with the vertices A(-5, 7), B(-4, -5) and C(4, 5) is
(a) 63 (b) 35 (c) 53 (d) 36

22. The distance of the point P(-6, 8) from the origin is
(a) 8 (b) $2\sqrt{7}$ (c) 10 (d) 6

23. One of the methods for determining mode is
(a) Mode = 2 Median -3 Mean (b) Mode = 3 Median – 2 Mean
(c) Mode = 2 Mean – 3 Median (d) Mode = 3 Mean – 2 Median

24. For the following distribution the upper limit of the median class is

C.I.	0-5	6-11	12-17	18-23	24-29
f	26	20	30	16	22

(a) 18.5 (b) 18 (c) 17.5 (d) 17

25. For the following distribution the number of students who got marks less than 30 is

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	3	9	13	10	5

(a) 13 (b) 25 (c) 10 (d) 12

26. In ABC, DE || AB. If CD = 3 cm, EC = 4 cm, BE = 6 cm, then DA is equal to

(a) 7.5 cm (b) 3 cm (c) 4.5 cm (d) 6 cm

27. If ΔABC ~ ΔDEF and ΔABC is not similar to ΔDEF then which of the following is not true?

(a) BC.EF = AC.FD (b) AB.ED = AC.DE (c) BC.DE = AB.EE (d) BC.DE = AB.FD

28. ABC and BDE are two equilateral triangles such that D is mid-point of BC. Ratio of the areas of triangles ABC and BDE is

(a) 2 : 1 (b) 1:4 (c) 1:2 (d) 4:1

29. which one of the following is phytahagorus triplets

a) 4,5,6 b) 5,6,7 c) 6,8,10 d) 3,6,9

30. Areas of two similar triangles are 36 cm^2 and 100 cm^2. If the length of a side of the larger triangle is 20 cm, then the length of the corresponding side of the smaller triangle is:

(a) 12cm (b) 13cm (c) 14cm (d) 15cm

31 . A circle has a number of tangents equal to

(a) 0 (b) 1 (c) 2 (d) Infinite

32. If the angle between two radii of a circle is 110º, then the angle between the tangents at the ends of the radii is:

(a) 90º (b) 50º (c) 70º (c) 40º

33. The length of a tangent from a point A at a distance 5 cm from the centre of the circle is 4 cm. The radius of the circle is:

(a)3cm (b) 5cm (c) 7cm (d) 10cm

34. Two concentric circles are of radii 5 cm and 3 cm. The length of the chord of the larger circle which touches the smaller circle is:

(a) 8 (b) 10 (c) 12 (d) 18

35. The length of a tangent drawn from a point at a distance of 10 cm of circle is 8 cm. The radius of the circle is

(a) 4 cm (b) 5 cm (c) 6 cm (d) 7 cm

36. When a line segment is divided in the ratio 2 : 3, how many parts is it divided into?

(a)6 (b) 2 (c) 3 (d) 5

37.The total surface area of a solid hemisphere of radius r is:

(a) $4\pi r^2$ (b) $2\pi r^2$ (c) $43\pi r^3$ (d) $3\pi r^2$

38. The surface area of a sphere is 616 cm2. Its radius is

(a) 7 cm (b) 14 cm (c) 21 cm (d) 28 cm

39. A cylinder and a cone are of same base radius and of same height. The ratio of the volume of the cylinder to that of the cone is

(a) 2 : 1 (b) 3 : 1 (c) 2 : 3 (d) 3 : 2

40. A solid cylinder of radius r and height h is placed over other cylinder of same height and radius. The total surface area of the shape so formed is

(a) $4\pi rh + 4\pi r^2$ (b) $4\pi rh - 4\pi r^2$ (c) $4\pi rh + 2\pi r^2$ (d) $4\pi rh - 2\pi r^2$

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KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

IMPORTANT INSTRUCTIONS

1.Use only blue/black ball point pen to darken the circle for answer
ಉತ್ತರಗಳನ್ನು ಭರ್ತಿ ಮಾಡಲು ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಅನ್ನು ಉಪಯೋಗಿಸಿರಿ.

2.Do not make any rough work on this omr sheet
ಯಾವುದೇ ರೀತಿಯ ಕಚ್ಚಾಕೆಲಸವನ್ನು ಈ ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯ ಮೇಲೆ ಮಾಡಬಾರದು.

1.Do not fold, tear, wrinkle or staple on this OMR Sheet.
ಒ.ಎಮ್.ಆರ್ ಹಾಳೆಯನ್ನು ಮಡಚುವುದು, ಹರಿಯುವುದು ಅಥವಾ ಸ್ಟೆಪಲ್ ಪಿನ್ ಮಾಡಬಾರದು.

ಉದಾಹರಣೆ/Example

ತಪ್ಪು ವಿಧಾನ Wrong method	ಸರಿ ವಿಧಾನ Correct method
(A) B ✗C D	●

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Student signature

Room invigilator signature

SSLC PRACTICE PAPER-2021 MINORITY WELFARE DEPARTMENT

FOR ROUGH WORK

Minority welfare department
Directorate of minorities
Practice paper-08

Subject: Mathematics **max.marks:40**

Medium : English **Code No : 81E**

Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer and mark it with the given OMR sheet.

1.If p q r and s are in AP then r-q =

A) s-p B)s – q C) s – r D) None of these

2.(3x+2) (5x-3) and (4x+7) are the three consecutive terms of an AP. Then the value of x is

A)1 B) 3 C)5 D)7

3. the 10^{th} term of an Arithmetic progression -5, -1, 3, 7….. is

A) 5 B)15 C) 25 D)41

4.which of the following is not in A P

A) -1.2, -3.2,-5.2, -7.2…. B) a, 2a, 3a,4a… C) a, a^2,a^3,a^4…….. D) 0,-4,-8,-12……

5. If x, 13, y, 3 are in Arithmetic progression then the value of "x " is

A) 18 B)16 C)8 D)-18

6.If a pair of linear equations x – 2ky =0 and 3x+4y=20 are parallel to each other, then the value of "k"

A) $^2/_3$ B) - $^2/_3$ C) 3 D) 6

7. The pair of equations 5x-4y+8=0 and 7x+6y-9=0 has

A) A unique solution

B) Infinity many solutions

C) No solution

D)Exactly two solutions

8. x + y = 6 and x- y =2 then the value of " x"

A) 4 B) -4 C)2 D)-2

9. Identify the correct equation form for the following table

x	0	2	4
y	-6	-2	2

A) 2x +y =5 B)2x-y =6 C)x+2y =3 D)4x-3y=1

10.The value of "b"in the quadratic equation (2x-1)(x-3) = (x+5)(x-1) after reducing it to the standard form $ax^2+bx+c=0$

A) 11 B) 8 C)-11 D)10

11.The roots of the quadratic equation $x^2-3x-10=0$ are

A) 5,-2 B) 5,2 C) 5, -3 D) 5, 3

12. The nature of the roots of the quadratic equation $2x^2-3x+5=0$ are

A) real and equal B) no real roots C) real and distinct D) none of the above

13.The sum of two numbers is 27 and product is 182. Then the numbers are

A) -13,-14 B) 13,14 C)12,13 D)15,16

14.In two triangles the corresponding angles are equal and corresponding sides are in the same ratio .Then the triangles are

A) congruent triangles B)Similar triangles C)Congruent and similar D) none of these

15.Sides of two similar triangles are in the ratio 9:4. Areas of these triangles are in the ratio.

A)36 :16 B)16:81 C)81:16 D)81:9

16. The sides of some triangles are given below. Identify which form a right triangle

A) 7cm,24cm,25cm B)8cm,15cm 20cm C)3cm,8cm,6cm D) 4cm,12cm,16cm

17.In a triangle ABC, XY II BC, AX/AB =1/4 and AY = 4cm then the value of AC is.

A) 8cm B)16cm C) 12cm D)2cm

18. Basic proportionality theorem is also called as

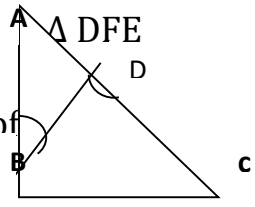
A) Thales theorem B) Pythagoras theorem

C) Area of similar triangle theorem D) None of these

19. If in two triangles ABC and DEF, AB/DF=BC/FE=CA/ED, then

A) $\Delta ABC \sim \Delta DEF$ B) $\Delta ABC \sim \Delta EDF$ C) $\Delta ABC \sim \Delta EFD$ D) $\Delta AE \sim \Delta DFE$

20. In triangle ABC, $\angle ABC=90^0$ BD $\perp$ AC. Then



A) $BD^2 = AD \times CD$ B) $AD^2 = AB \times AC$ C) $CD^2 = AB \times BC$ D) None of

21.If $\sin\theta = {}^{3}/_{5}$ and $\cos\theta = {}^{4}/_{5}$,then the value of $\sin^2\theta + \cos^2\theta$ =

A) 3 B) 0 C) 1 D) 2

22. If $2\cos2\theta = 1$ the value of ' θ' is

A) 90^0 B)60^0 C)30^0 D)45^0

23.The value of $(\sin30^0 + \cos30^0) - .(\sin60^0 + \cos60^0)$ is

A) -1 B)0 C)1 D)2

24)If sinA = $^1/_2$ and cosB = $^1/_2$ Then A+B =

A) 0^0 B)30^0 C)60^0 D)90^0

25.If $\cos 9\theta = \sin\theta$ and $9\theta < 90^0$, then the value of $\tan 5\theta$ is

A) $\sqrt{3}$ B) $^1/_{\sqrt{3}}$ C) 0 D)1

26) If the distance between the points (x,-1) and (3,2) is 5.then the value of x is

A) -7 or -1 B)-7 or 1 C) 7 or 1 D) 7 or -1

27. The points (1,1), (-2,7) and (3, -3)are

A) vertices of an equilateral triangle B) collinear

C) vertices of an isosceles triangle D)none of these

28.The points (-5,1) (1,p) and (4,-2) are collinear if the value of p is.

A)3 B)2 C)1 D)-1

29.The distance of the point (α+β) from the origin is

A) (α+β) B) $(\alpha^2 + \beta^2)$ C)0 D)$\sqrt{\alpha^2 + \beta^2}$

30.The distance between A(a+b , a-b) and B(a-b,-a-b)is

A) $(a^2 + b^2)$ B) (a+b) C) $2\sqrt{a^2 + b^2}$ D) none of these

31.The mode and mean is given by 7 and 8,respectively.Then the median is:

A) $^1/_{13}$ B) $^{13}/_3$ C) $^{23}/_3$ D)33

32.If mean of a, a+3, a+6, a+9 and a+12 is 10,then 'a' is equal to;

A) 1 B) 2 C)3 D)4

33.If the sum of frequencies is 24, then the value of x in the observation: x,5,6,1,2 will be

A)4 B) 6 C)8 D)10

34.If the angle between two radii of a circle is 110^0 , then the angle between the tangents at the end of the radii is

A)90^0 B)50^0 C) 70^0 D)40^0

35. The length of tangent from an external point' p' on a circle with centre o is

A) always greater than OP

B) Equal to OP

C) Always less than OP

D) information insufficient

36. If two tangents inclined at an angle 60^0 are drawn to a circle of radius 3cm, then length of each tangent is equal to

A)$2\sqrt{3}$ B) $6\sqrt{3}$ C) $3\sqrt{3}$ D)3cm

37.The total surface area of a cylinder of radius 'r'cm and height 'h'cm is

A)$2\pi r(r+h)cm^3$ B) $\pi r^2h\ cm^2$ C) $2\pi rh\ cm^2$ D) $2\pi r(r+h)cm^2$

37.A cylinder, a cone and a hemisphere are of equal base and have the same height, what is the ratio of their volumes?

A) 3:1:2 B) 3:2:1 C)1;2;3 D)1:3:2

38.The volumes of two spheres are in the ratio 27:8.The ratio of their curved surface is:

A)9:4 B)4:9 C)3:2 D)2:3

39.A cylinder pencil sharpened at one edge is combination of

A) a cone and a cylinder

B) Frustum of a cone and cylinder

C) a hemisphere

D) four cylinder

40.The total surface area of a solid hemisphere of radius 'r'is

A)$4\pi r^2$ B)$2\pi r^2$ C) πr^2 D)$3\pi r^2$

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KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

OMR SHEET – SSLC MAIN EXAMINATION 2020-21

Directorate of minorities

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ಉದಾಹರಣೆ/Example

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(A) B ✗C D	●

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